Abstract

System and method for implementing a synchronous reactive system in a graphical program. A loop structure is included in the graphical program in response to first user input, and is operable to execute iteratively in a synchronous manner, where the loop structure performs each iteration subject to a time constraint.. A plurality of graphical program nodes is included in the loop structure in response to second user input. The loop structure includes at least one synchronization register, comprising an input and an output. During execution of the graphical program, for each iteration, the input to the synchronization register stores the state information for the current iteration, and the output of the synchronization register provides the state information for use in a next iteration of the loop, where the loop structure executes the plurality of graphical program nodes in the loop structure using stored state information from an immediately previous iteration.